

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
24 April 2003 (24.04.2003)

PCT

(10) International Publication Number
WO 03/033121 A1

- (51) International Patent Classification⁷: **B01D 61/44**, C07C 209/84, B01D 65/02
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- (21) International Application Number: PCT/EP02/11454
- (22) International Filing Date: 7 October 2002 (07.10.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
01203863.4 12 October 2001 (12.10.2001) EP
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- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— *with international search report*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: PROCESS FOR IMPROVING THE PURITY OF QUATERNARY AMMONIUM HYDROXIDES BY ELECTROLYSIS IN A TWO-COMPARTMENT CELL

(57) Abstract: The present invention relates to a process for purifying a recycle base solution waste stream of a composition comprising a quaternary ammonium hydroxide comprising the steps of (a) providing an electrolysis cell which comprises an anolyte compartment containing an anode, a catholyte compartment containing a cathode, and a cation-selective membrane separating the anolyte and catholyte compartments, (b) charging the recycle base solution waste stream comprising the quaternary ammonium hydroxide to be purified to the anolyte compartment and charging water, optionally containing a quaternary ammonium hydroxide, to the catholyte compartment, (c) passing a current through the electrolysis cell to produce a purified aqueous quaternary ammonium hydroxide solution in the catholyte compartment, (d) recovering the purified aqueous quaternary ammonium hydroxide solution from the catholyte compartment, (e) washing the anolyte compartment with a suitable solvent, and (f) repeating steps (b)-(e). The process is particularly suitable for improving the purity of an aqueous solution comprising tetramethyl ammonium hydroxide, which was used in the production of 4-aminodiphenylamine for a number of reaction cycles.



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